

# Installing Natural Connection

This section describes how to install Natural Connection under the operating systems OS/390, VSE/ESA, BS2000/OSD and VM/CMS:

- General Information
  - Installation Tape - OS/390
  - Installation Tape - VSE/ESA
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## General Information

The section below covers the following topics:

- Prerequisites
- Installation Jobs
- Using System Maintenance Aid

## Prerequisites

Products and versions are specified under Natural and Other Software AG Products and Operating/Teleprocessing Systems Required in the current Natural Release Notes for Mainframes.

## Installation Jobs

The installation of Software AG products is performed by installation jobs. These jobs are either created manually or generated by System Maintenance Aid (SMA).

For each step of the installation procedure described below, the job number of a job performing the respective task is indicated. This job number refers to an installation job generated by SMA. If you are not using SMA, an example installation job of the same number is provided in the job library on the Natural installation tape; you must adapt this example job to your requirements. The job numbers on the tape are preceded by a product code (for example, NTCI061).

## Using System Maintenance Aid

For information on using Software AG's System Maintenance Aid (SMA) for the installation process, refer to the System Maintenance Aid documentation.

## Installation Tape - OS/390

The installation tape contains the datasets listed in the table below. The sequence of the datasets is shown in the Report of Tape Creation which accompanies the installation tape.

Dataset Name	Contents
NTCnnn.LOAD	Natural Connection load modules.
NTCnnn.INPL	Natural Connection example programs in INPL format.

The notation *nnn* in dataset names represents the version number of the product.

### Copying the Tape Contents to Disk

If you are using System Maintenance Aid (SMA), refer to the SMA documentation (included on the current edition of the Natural documentation CD).

If you are **not** using SMA, follow the instructions below.

This section explains how to:

- Copy data set COPY.JOB from tape to disk.
- Modify this data set to conform with your local naming conventions.

The JCL in this data set is then used to copy all data sets from tape to disk.

If the datasets for more than one product are delivered on the tape, the dataset COPY.JOB contains the JCL to unload the datasets for all delivered products from the tape to your disk.

After that, you will have to perform the individual install procedure for each component.

### Step 1 - Copy data set COPY.JOB from tape to disk

The data set COPY.JOB (label 2) contains the JCL to unload all other existing data sets from tape to disk. To unload COPY.JOB, use the following sample JCL:

```
//SAGTAPE JOB SAG,CLASS=1,MSGCLASS=X
// * -----
//COPY EXEC PGM=IEBGENER
//SYSUT1 DD DSN=COPY.JOB,
// DISP=(OLD,PASS),
// UNIT=(CASS,,DEFER),
// VOL=(,RETAIN,SER=<Tnnnnn>),
// LABEL=(2,SL)
//SYSUT2 DD DSN=<hilev>.COPY.JOB,
// DISP=(NEW,CATLG,DELETE),
// UNIT=3390,VOL=SER=<vvvvvv>,
// SPACE=(TRK,(1,1),RLSE),
// DCB=*.SYSUT1
//SYSPRINT DD SYSOUT=*
//SYSIN DD DUMMY
//
```

Where:

<hilev> is a valid high level qualifier

<Tnnnnn> is the tape number

<vvvvvv> is the desired volser

## Step 2 - Modify COPY.JOB to conform with your local naming conventions

There are three parameters you have to set before you can submit this job:

- Set HILEV to a valid high level qualifier.
- Set LOCATION to a storage location.
- Set EXPDT to a valid expiration date.

## Step 3 - Submit COPY.JOB

Submit COPY.JOB to unload all other data sets from the tape to your disk.

# Installation Tape - VSE/ESA

The installation tape contains the datasets listed in the table below. The sequence of the datasets is shown in the Report of Tape Creation which accompanies the installation tape.

Dataset Name	Contents
NTCnnn.LIBR	LIBR backup file.
NTCnnn.INPL	Natural Connection example programs in INPL format.

The notation *nnn* in dataset names represents the version number of the product.

## Copying the Tape Contents to Disk

If you are not using System Maintenance Aid, adapt and run job NTCTAPE to restore the Natural Connection sublibrary from tape and make it known to MSPH.

NTCTAPE is contained in sublibrary NATnnnJ on the Natural installation tape. For further information, see the Natural Installation Guide for Mainframes.

The space each dataset requires on disk is shown in the Report of Tape Creation.

## Installation Tape - BS2000/OSD

The installation tape contains the datasets listed in the table below. The sequence of the datasets is shown in the Report of Tape Creation which accompanies the installation tape.

Dataset Name	Contents
NTC <i>nnn</i> .PAMS	Natural Connection module library.
NTC <i>nnn</i> .INPL	Natural Connection example programs in INPL format.

The notation *nnn* in dataset names represents the version number of the product.

### Copying the Tape Contents to Disk

If you are not using SMA, copy the datasets from tape to disk using the procedure described below. In this procedure the following values must be supplied:

- In the dataset names, replace *nnn* with the current version number of the datasets.
- Replace all *xxxxxx* with the volume serial number of the tape.

#### Step 1

Copy the job dataset NTC*nnn*.JOBS from tape to disk using the BS2000/OSD utility EDT.

Issue the following commands in EDT.

```
/FILE NTCnnn.JOBS,VOL=xxxxxx,DEV=T9G -
/      ,STATE=FOREIGN,FSEQ=UNK,LINK=EDTSAM
/EXEC EDT
@ READ ' / '
@ SY ' /REL EDTSAM'
@ WRITE ' P.NTCnnn'
@ HALT
```

#### Step 2

Then issue the following command:

```
/CALL P.NTCnnn,PRODUCT=NTCnnn
```

An example job library LIB.NTC*nnn* will be created from the procedure dataset.

#### Step 3

Adapt job E.NTCTAPE from the example job library.

Then issue the following command to run the job which copies all datasets from tape to disk:

```
/E LIB.NTCnnn.JOBS(E.NTCTAPE)
```

## Installation Tape - VM/CMS

The installation tape contains the datasets listed in the table below. The sequence of the datasets is shown in the Report of Tape Creation which accompanies the installation tape.

Dataset Name	Contents
NTC $nnn$ .TAPE	Natural Connection load module.
NTC $nnn$ .INPL	Natural Connection example programs in INPL format.

The notation  $nnn$  in dataset names represents the version number of the product.

### Copying the Tape Contents to Disk

1. To position the tape for the TAPE LOAD command, calculate the number of tape marks as follows:  
If the sequence number of NTC $nnn$ .TAPE, as shown by the Report of Tape Creation, is  $n$ , you must position over  $3n - 2$  tape marks (that is, FSF 1 for the first dataset, FSF 4 for the second, etc.)
2. Access the disk that is to contain the Natural installation files as disk "A".
3. Ask the system operator to attach a tape drive to your virtual machine at the address X'181' and mount the Natural Connection installation tape.
4. When the tape has been attached, enter the CMS command:  
TAPE REW  
Position the tape by entering the CMS command:  
TAPE FSF  $n$   
where  $n$  is the number of tape marks and is calculated as described above ( $3n - 2$ ).
5. Load the Natural Connection/CMS installation material by entering the CMS command:  
TAPE LOAD \* \* A  
Keep the tape drive attached to your virtual machine, because the tape is still needed during the installation procedure.

## Installation Procedure

This section describes step by step how to install Natural Connection under the operating systems OS/390, VSE/ESA, BS2000/OSD and VM/CMS.

### Step 1: Load Natural - Job I061, Step 0700

Use the Natural system command INPL to load the Natural objects (dataset NTC $nnn$ .INPL) into the Natural system file.

### Step 2: Adjust Natural Parameter Modules - Job I080

Specify the keyword parameter AM=PC for all printer files and work files you want to use for data transfer between the host and the PC. For example:

```
NTPRINT ( 7 ),AM=PC
NETWORK ( 7 ),AM=PC
```

Specify the parameter PC=ON either dynamically or in your Natural parameter module.

For information on using the parameters, refer to Profile Parameter Usage (in the Natural Operations for Mainframes documentation).

For details of the parameters or macros, see the Parameter Reference overview page or the Parameter Modules overview page (in the Natural Parameter Reference documentation).

## Step 3: Adapt Link Steps - Job I080

Adapt the link steps for online Natural.

- **OS/390:**

Add the following INCLUDE instruction and the corresponding DD-statements in the link instructions for the linkage editor:

```
INCLUDE NTCLIB(NTCPCAM3)    mandatory
```

- **VSE/ESA:**

Add the following INCLUDE instruction and the corresponding sublibrary for Natural Connection in the search chain for the linkage-editor:

```
INCLUDE NTCPCAM3    mandatory
```

- **BS2000/OSD:**

Add the following INCLUDE instruction to the element LNATSHAR in LIB.NAT $nnn$ :

```
INCLUDE NTCPCAM3,NTC $nnn$ .MOD
```

Relink your Natural shared nucleus with the procedure P.LINKMOD in LIB.NAT $nnn$ .

- **VM/CMS:**

The list of text files to be included in the Natural module or DCSS is contained in REXX program NAT\$LOAD EXEC (variable LOADLIST). To customize your Natural system, modify this EXEC with XEDIT by changing the LOADLIST as required.

Add the following INCLUDE instruction to the program NAT\$LOAD EXEC

```
LOADLIST = LOADLIST 'NTCPCAM3'
```

Relink your Natural nucleus with the procedure NATBLDM.

## Installation Verification

### To verify the successful installation of Natural Connection

1. Start Entire Connection on the PC and invoke terminal emulation.
2. Invoke Natural on the mainframe.
3. Enter the terminal command %+ to activate the PC connection.
4. Invoke the NTCPC utility and download a Natural program to the PC.
5. Verify that the downloaded program is now on your PC.